

CITYWIDE LEARNING STANDARDS
GRADE LEVEL SUMMARY:
English Language Arts, History & Social Studies,
Mathematics, Science & Technology

September, 2006

Grade 5

BPS CITYWIDE LEARNING STANDARDS: GRADE 5

INTRODUCTION



Goals

The Boston Public Schools Citywide Learning Standards are designed to produce *independent learners* who are encouraged to:

- Think, question, and communicate
- Gain and apply knowledge
- Work and contribute in meaningful, purposeful ways.

Students *think, question, and communicate* to make sense or meaning of their world and experiences.

Thinking includes being able to internalize new ideas and connect them to familiar concepts and prior knowledge.

Questioning includes the framing of thoughtful questions, and the pursuit of these questions until the student fully understands.

Communicating means putting learning into the language of speech or writing, and requires reflection in such forms as examination, clarification, analysis, and synthesis.

Students *gain and apply knowledge* to pursue ideas and experiences, and apply this new knowledge in real life contexts. This pursuit is interactive by nature. The more collaborative and experiential it is, the more powerful the learning.

Students' *work needs to be meaningful and purposeful*. The process and products of student work need to be valued contributions to the school and community, and the student. Embedded in powerful learning experiences are notions of persistence, self-discipline, hard work, effort, and pride in producing quality work.

Teaching and Learning in the Boston Public Schools

Learning is an active, constructive, creative, and often collaborative process that involves a variety of distinct cognitive strategies. Skillful learners use these strategies, largely unconsciously, to access content through text or other media, to make meaning of the content, to make connections with and apply the content in thoughtful and meaningful ways, and to retain the content for later use. In learning these strategies and coming to own them, students learn *how* to learn in addition to acquiring important knowledge. These strategies include the following:

Students will...

- Read, write, and think a lot about topics and ideas of importance to them.
- Set goals or purposes for their learning.
- Make personal connections between the content and other knowledge, experiences, text, or media.
- Ask questions as they read, listen, or view.
- Clarify the meaning of words or content they don't understand.
- Listen or watch for important elements, themes, or issues.
- Create sensory images.
- Make predictions, inferences and judgments.
- Get "in the shoes" of characters or participants.
- Create ongoing summaries or syntheses.

- Build on their understandings by sharing and discussing them with others.
- Assess their learning and make mid-course corrections.

Because we know this is how people learn, the system supports the *workshop* approach to teaching and learning. The workshop approach helps teachers organize their classrooms and instructional time to teach effective reading, writing, and learning strategies and to help students put them into practice. The most important goal of this approach is the development of *independent learners* who are equipped with the skills and knowledge they will need for a lifetime of learning.

The workshop approach derives from the insight that people learn best by doing and that teachers often need to provide students with more time to read, write, and use effective learning strategies to explore and understand the content they are studying. The approach also derives from the insight that students need to share in the ownership of the curriculum to increase their investment, engagement, and motivation. Students need to participate in the selection of “just right” books for independent and small group reading and writing activities, and they need to explore, read, and write about topics and ideas of importance to them (as well as the curriculum).

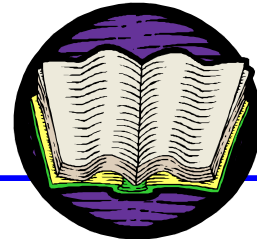
The workshop approach uses a mixture of whole-class, small group, partner, and one-on-one instruction that centers on conversations about content, strategies, and work routines. Each of these varied approaches to teaching and learning is essential to students’ development as independent readers, writers, and learners.

The Habits of Mind and Work

The following habits enable effective learning and are essential to students' success in school. Developing these habits in students is the responsibility of every teacher, administrator, and other adult involved in the lives of our children.

- **Curiosity and Critical Thinking:** Students listen attentively, observe carefully, and ask thoughtful questions until they understand; they look for good evidence.
- **Respect for Diversity:** Students recognize and value racial, ethnic, cultural, age, gender, and individual commonalities and differences; they respect other people's points of view.
- **Consideration and Compassion:** Students treat themselves and others with care and respect; they build trusting relationships; they help, care for, and share with one another.
- **Collaboration:** Students work well with others, give and accept constructive criticism, try to be fair, and try to solve problems in a reasonable, peaceful manner.
- **Self-Direction:** Students check their own work, invite the critical response of others, and make appropriate adjustments.
- **Perseverance:** Students work hard until the job is done right, and are patient when the answers do not come quickly.
- **Initiative:** Students try new things, take reasonable risks, and reflect on their successes and mistakes.
- **Courage:** Students stand up for their rights and the rights of others in a positive manner that shows self-respect and respect for others; they resist harmful pressure.
- **Responsibility:** Students demonstrate personal responsibility and pursue important goals for themselves and their schools.

ENGLISH LANGUAGE ARTS: GRADE 5



Oral Presentation and Discussion

The student will be able to:

- Use agreed-upon rules for informal and formal discussions in small and large groups such as Book Club, Literature Circles and Buddy Reading.
- Facilitate discussion groups independent from the teacher.
- Students will conduct interviews for research projects and writing.
- Give oral presentations, using teacher-made criteria that demonstrate consideration of audience, purpose and content.
- Use visual aides in to support presentations.

Language

Students will be able to:

- Determine the meaning of unfamiliar words through context clues, definition and structural analysis, using knowledge of Greek and Latin roots, suffixes and prefixes.
- Determine pronunciations, meanings, alternate word choices and parts of speech of words using dictionaries, and thesauruses.
- Identify and use correctly all eight parts of speech, verb phrases and verb tenses.
- Identify a word that performs different functions according to its position in the sentence.
- Demonstrate in writing, reading and oral language knowledge of the appropriate use of formal and informal language.

Reading and Literature

Students will be able to:

- Expand vocabulary through word study and independent reading.
- Identify basic facts in and main ideas and supporting ideas and details in a text and use them as a basis for interpretation.
- Identify and analyze sensory language in literary text and recognize organizational structures and text features in informational text.
- Relate a literary work to its setting, Identify and analyze characteristics of various genres (poetry, fiction, nonfiction, short story and drama) as forms with distinct characteristic and purposes.
- Apply knowledge of the concept of theme in literature and provide evidence from the text to provide evidence of understanding.
- Demonstrate how different authors use the same theme in their writing.
- Identify and analyze story elements of plot character, theme and setting in a piece of writing with support from the text.
- Identify, analyze and apply knowledge of informational text to get information.
- Use literature and informational text to write a Key Question response supported with evidence from the text.
- Perform dramatic readings recitations and performances that demonstrate consideration of audience and purpose.

Writing and Composition

Students will be able to:

- Take a seed idea from their Writers' Notebook and bring it through the writing process of draft, multiple revisions and edits to a published product, independently, in a variety of genre.
- Write with a clear focus, coherent organization and sufficient detail demonstrating voice and knowledge of writer's craft.
- Write stories or scripts containing basic story elements.
- Write poems demonstrating poetic technique.
- Write research papers with a clear focus, topic sentence, supporting details and conclusion.
- Write formal and friendly letters for authentic purposes.
- Make distinctions among fiction, nonfiction, drama and poetry when writing for different purposes.
- Organize ideas in writing in a way that makes sense and revise to improve level of detail and precision.
- Use knowledge of mechanics and grammar to edit writing.
- Keep a writing portfolio to assess and evaluate work.
- Obtain and organize material from a variety of sources for research.

Media

Students will be able to:

- Use film, radio, TV the and The Internet to demonstrate an understanding of how these mediums convey information and entertain in ways that are different from text.
- Create a media production using effective images from text, music, software or graphics.

Teachers should refer to the grade 5 English Language Arts Course Guide for ideas and activities related to the standards.



HISTORY & SOCIAL STUDIES: GRADE 5

United States History, Geography, Economics, and Government: Early Exploration to Westward Movement



Students study the major pre-Columbian civilizations in the New World; the 15th and 16th century European explorations around the world, in the western hemisphere, and in North America in particular; the earliest settlements in North America; and the political, economic, and social development of the English colonies in the 17th and 18th centuries. They also study the early development of democratic institutions and ideas, including the ideas and events that led to the independence of the original thirteen colonies and the formation of a national government under the U.S. Constitution. The purpose of the grade 5 curriculum is to give students their first concentrated study of the formative years of U.S. history.

The grade 5 MCAS will cover the U.S. history, geography, economics, and civics standards, concepts, and skills of grades 4 and 5.

Grade 5 Concepts and Skills

Students will be able to.....

Apply concepts and skills learned in previous grades.

History and Geography

1. Identify different ways of dating historical narratives (*17th century, seventeenth century, 1600s, colonial period*). (H)
2. Interpret timelines of events studied. (H)
3. Observe and identify details in cartoons, photographs, charts, and graphs relating to an historical narrative. (H, E, C)
4. Use maps and globes to identify absolute locations (latitude and longitude). (G)
5. Identify the location of the North and South Poles, the equator, the prime meridian, Northern, Southern, Eastern, and Western Hemispheres. (G)
6. Distinguish between political and topographical maps and identify specialized maps that show information such as population, income, or climate change. (G, H, E)
7. Compare maps of the modern world with historical maps of the world before the Age of Exploration, and describe the changes in 16th and 17th century maps of the world. (G, H, E)

Civics and Government

8. Define and use correctly words related to government: *citizen, suffrage, rights, representation, federal, state, county, and municipal*. (C)
9. Give examples of the responsibilities and powers associated with major federal and state officials (the President, chief justice of the U.S. Supreme Court, governor, state senators, and state representatives). (C)
10. Explain the structure of the student's city or town government. (C)

Economics

11. Give examples of the ways people save their money and explain the advantages and disadvantages of each. (E)
12. Define what an entrepreneur is (a person who has started a business seeking a profit) and give examples from colonial history of an entrepreneur (e.g., Peter Faneuil and Benjamin Franklin). (E)
13. Define profit and describe how profit is an incentive for entrepreneurs. (E)

14. Give examples of how changes in supply and demand affected prices in colonial history (e.g., fur, lumber, fish, and meat). (E, H)

Grade 5 Learning Standards

Building on knowledge from previous years, students will be able to.....

Pre-Columbian Civilizations of the New World and European Exploration, Colonization, and Settlement to 1700

- 5.1 Describe the earliest explorations of the New World by the Vikings, the period and locations of their explorations, and the evidence for them. (H, G)
- 5.2 Identify the three major pre-Columbian civilizations that existed in Central and South America (Maya, Aztec, and Inca) and their locations. Describe their political structures, religious practices, and use of slaves. (H, G, E)
- 5.3 Explain why trade routes to Asia had been closed in the 15th century and trace the voyages of at least four of the explorers listed below. Describe what each explorer sought when he began his journey, what he found, and how his discoveries changed the image of the world, especially the maps used by explorers. (H, G, E)
- Vasco Nuñez de Balboa
 - John and Sebastian Cabot
 - Jacques Cartier
 - Samuel de Champlain
 - Christopher Columbus
 - Henry Hudson
 - Ferdinand Magellan
 - Juan Ponce de Leon
 - Amerigo Vespucci
- 5.4 Explain why the Aztec and Inca civilizations declined in the 16th century. (H)
- the encounters between Cortez and Montezuma
 - the encounters between Pizarro and the Incas
 - the goals of the Spanish conquistadors
 - the effects of European diseases, particularly smallpox, throughout the Western hemisphere
- 5.5 Describe the goals and extent of the Dutch settlement in New York, the French settlements in Canada, and the Spanish settlements in Florida, the Southwest, and California. (H)
- 5.6 Explain the early relationship of the English settlers to the indigenous peoples, or Indians, in North America, including the differing views on ownership or use of land and the conflicts between them (e.g., the Pequot and King Philip's Wars in New England). (H, G, E)
- 5.7 Identify some of the major leaders and groups responsible for the founding of the original colonies in North America. (H, C)
- Lord Baltimore in Maryland
 - William Penn in Pennsylvania
 - John Smith in Virginia
 - Roger Williams in Rhode Island
 - John Winthrop in Massachusetts
- 5.8 Identify the links between the political principles and practices developed in ancient Greece and such political institutions and practices as written constitutions and town meetings of the Puritans. (H, C)
- 5.9 Explain the reasons that the language, political institutions, and political principles of what became the United States of America were largely shaped by English colonists even though other major European nations also explored the New World. (H, C)
- the relatively small number of colonists who came from other nations besides England

- b. long experience with self-government
- c. the high rates of literacy and education among the English colonial leaders
- d. England's strong economic, intellectual, and military position

The Political, Intellectual, and Economic Growth of the Colonies, 1700-1775

- 5.10 On a map of North America, identify the first 13 colonies and describe how regional differences in climate, types of farming, populations, and sources of labor shaped their economies and societies through the 18th century. (H, G, E)
- 5.11 Explain the importance of maritime commerce in the development of the economy of colonial Massachusetts, using the services of historical societies and museums as needed. (H, E)
- a. the fishing and shipbuilding industries
 - b. trans-Atlantic trade
 - c. the port cities of New Bedford, Newburyport, Gloucester, Salem, and Boston
- 5.12 Explain the causes of the establishment of slavery in North America. Describe the harsh conditions of the Middle Passage and slave life, and the responses of slaves to their condition. Describe the life of free African Americans in the colonies. (H, G, E, C)
- 5.13 Identify the founders and the reasons for the establishment of educational institutions in the colonies (grammar schools and colleges such as Harvard and the College of William and Mary). (H)
- 5.14 Explain the development of colonial governments and describe how these developments contributed to the Revolution. (H, G, E, C)
- a. legislative bodies
 - b. town meetings
 - c. charters on individual freedom and rights
- 5.15 Explain the reasons for the French and Indian War, how it led to an overhaul of British imperial policy, and the colonial response to these policies. (H, C, E)
- a. Sugar Act (1764)
 - b. Stamp Act (1765)
 - c. Tea Act (1773) and the Intolerable Acts (1774)
 - d. the slogan, "no taxation without representation"
 - e. the roles of the Stamp Act Congress, the Sons of Liberty, and the Boston Tea Party (1773)

The Revolution and the Formation of a Federal Government under the Constitution, 1775-1789

- 5.16 Explain the meaning of the key ideas on equality, natural rights, the rule of law, and the purpose of government contained in the Declaration of Independence. (H, C, E)
- 5.17 Describe the major battles of the Revolution and explain the factors leading to American victory and British defeat. (H)
- a. Lexington and Concord (1775)
 - b. Bunker Hill (1775)
 - c. Saratoga (1777)
 - d. Valley Forge (1777-1778)
 - e. Yorktown (1781)
- 5.18 Describe the life and achievements of important leaders during the Revolution and the early years of the United States. (H, C)
- a. John Adams
 - b. Benjamin Franklin
 - c. King George III
 - d. Alexander Hamilton
 - e. Thomas Jefferson
 - f. James Madison
 - g. George Washington

- 5.19 Identify the Constitution of the Commonwealth of Massachusetts, including its date, its primary author (John Adams), and the basic rights it gives to citizens of the Commonwealth. (C)
- 5.20 Explain the reasons for the adoption of the Articles of Confederation in 1781 and for its later failure. (H, C)
- 5.21 Describe Shays's Rebellion of 1786-1787 and explain why it was one of the crucial events leading to the Constitutional Convention. (H, E, C)
- 5.22 Identify the various leaders of the Constitutional Convention and describe the major issues they debated. (H, E, C)
 - a. distribution of political power
 - b. rights of individuals
 - c. rights of states
 - d. the Great Compromise
 - e. slavery

The Principles and Institutions of American Constitutional Government

- 5.23 Describe the responsibilities of government at the federal, state, and local levels (e.g., protection of individual rights and the provision of services such as law enforcement and the building and funding of schools). (C)
- 5.24 Describe the basic political principles of American democracy and explain how the Constitution and the Bill of Rights reflect and preserve these principles. (C)
 - a. individual rights and responsibilities
 - b. equality
 - c. the rule of law
 - d. limited government
 - e. representative democracy
- 5.25 Identify the three branches of the United States government as outlined by the Constitution, describe their functions and relationships, and identify what features of the Constitution were unique at the time (e.g., the presidency and the independent judiciary). (H, C)
- 5.26 Identify the rights in the Bill of Rights and explain the reasons for its inclusion in the Constitution in 1791. (H, C)
- 5.27 Explain how American citizens were expected to participate in, monitor, and bring about changes in their government over time, and give examples of how they continue to do so today. (H, C)

The Growth of the Republic

- 5.28 Identify the changes in voting qualifications between 1787 and 1820 (e.g., the abolition of property requirements), and compare who could vote in local, state, and national elections in the U.S. with who could vote in England, France, and Russia. (H, C)
- 5.29 Explain the events leading up to, and the significance of, the Louisiana Purchase of 1803. (H, C, E, G)
- 5.30 Describe the expedition of Lewis and Clark from 1803 to 1806. (H, E, G)
- 5.31 Describe the significance and consequences of the abolition of slavery in the northern states after the Revolution and of the 1808 law that banned the importation of slaves into the United States. (H)
- 5.32 Describe the causes of the war of 1812 and how events during the war contributed to a sense of American nationalism. (H)
 - a. British restrictions on trade and impressment
 - b. Major battles and events of the war, including the role of the USS Constitution, the burning of the Capitol and the White House, and the Battle of New Orleans
- 5.33 Explain the importance of the China trade and the whaling industry to 19th century New England, and give examples of imports from China. (H)

- 5.34 Explain the reasons that pioneer moved west from the beginning to the middle of the 19th century, and describe their lives on the frontier. (H, G, C, E)
- wagon train journeys on the Oregon and Santa Fe Trails
 - their settlements in the western territories
- 5.35 Identify the key issues that contributed to the onset of the Civil War. (H, E)
- the debate over slavery and westward expansion
 - diverging economic interests

General Standards: The following standards apply to all of the topics identified below.

Content

Students will...

- Construct and interpret historical timelines; associate period with chronological order.
- Put events into temporal order.
- Observe and identify details in cartoons, photographs, charts and graphs.
- Use maps and globes to locate places and events: demonstrate an understanding of longitude and latitude; North and South Pole, Equator, Prime Meridian, Hemispheres; compass rose, scale, legend; political, topographical, specialized, modern and historical maps and their differences
- Demonstrate an understanding of cause and effect, and the relations between events.
- Demonstrate an understanding that actions can have intended and unintended consequences.
- Be familiar with the key people, places, events, documents, movements, and other details identified under each topic.
- Make connections between key people and events, people and events from their own lives, the lives of family members, and people and events in the world around them.
- Compare and contrast ideas, rituals, customs, and concerns expressed or conducted by individuals of the past that may be similar or different from their own.
- Increase and demonstrate their understanding of the big ideas associated with each topic, using key people, places, events, document, et al. to illustrate and support their own ideas.
- Conduct historical inquiry projects: employ a variety of sources to gather information and evidence, and reach conclusions; identify primary and secondary sources; differentiate among the kinds of texts they read; understand that narrative accounts vary in emphasis and accuracy depending upon to the author's point of view and understanding of cause or significance.

Discussion and Presentation

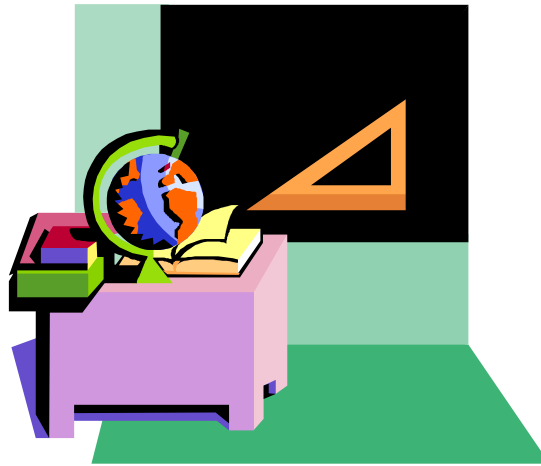
Students will...

- Use agreed upon rules to participate in and facilitate large and small group discussions.
- Organize and present their thoughts in a logical manner.
- Support their ideas with evidence or details; expect and request the same of others.
- Actively listen, respond to, and build on ideas generated during discussions.
- Use the information to inform or change their perspectives.
- Ask for clarification when others' responses are unclear.
- Summarize and evaluate what they have learned from the discussion.
- Evaluate the productivity of discussions using established criteria; make suggestions to improve the discussions.
- Give oral presentations, using established criteria to prepare, assess, and improve their presentations.

Composition

Students will...

- Write frequently in response to readings, lectures, and other presentations (e.g., summaries, questions, reactions, interpretations, connections, perspectives, predictions, “in the shoes” narratives and reflections, and other written or artistic responses to people and events.
- Maintain a system (e.g., history notebooks) for collecting, referring to, and sharing their notes, thoughts, and writings, including formal writing products.
- Write occasional, brief research reports to extend their knowledge beyond classroom presentations; include a clear focus and supporting details.
- Write, share, assess, and revise frequent responses to MCAS-like, open response (key) questions posed by the teacher.



MATH: GRADE 5



Data Analysis, Statistics, and Probability

Students will be able to...

- Describe and compare data sets using the concepts of median, mode, maximum and minimum, and range.
- Find medians and other fractional parts of data sets.
- Use data characteristics to identify data sets, to describe numerical and categorical variables, and to compare a sample to a larger population.
- Frame question about association between variables in a data set and construct representations and descriptions that help answer those questions.
- Formulate, test, define, and refine survey questions and uses background information in designing a survey.
- Construct and interpret a variety of data representations.
- Theorize and makes statements, conclusions, and recommendations based on organized data.
- Formulate questions, collect and organize data and make line plots and tables to examine and compare data sets.
- Know what a sample is, what some of the factors that make a sample reasonable are, and why a larger sample tends to reflect a populations better than a smaller one.
- Develop strategies for finding a representative sample.
- Students predict the probability of outcomes of simple experiments.
- Understand probability as how likely something is to occur.
- Understand that the probability of an event ranges from never to always.
- Can accurately describe the probability of an event using numbers or words.
- Recognize that repeating a probability experiment several times can yield a variety of results.
- Recognize that probability can be described using fractions, decimals, or percents.
- Plot the results of probability experiments on line plots and interpret the data represented.
- Can estimate probabilities based on results of actual trials.

Geometry

Students will be able to...

- Identify polygons based on their properties.
- Distinguish between polygons and non-polygons and between regular and non-regular polygons.
- Recognize and name polygons by the number of sides.
- Sort and classify triangles and quadrilaterals and use mathematical vocabulary to describe them.
- Graph points and identify coordinates of points on the Cartesian coordinate plane.
- Locate and plot points on a coordinate grid.
- Identify relationships among points, lines, and planes, turns and angles, e.g., intersecting, parallel, perpendicular.
- Understand parallel lines.
- Find and understand relationships among angles, line lengths, and areas of similar polygons.

- Determine if two shapes are congruent by measuring sides or a combination of sides and angles, as necessary; or by motions or series of motions, e.g., translations, rotations, and reflections.
- Find the size of turns and angles and the sums of turns and angles in regular and non-regular polygons.
- Identify 3-D shapes based on their properties, such as edges and faces.
- Understand the idea of volume and units of volume.
- Develop, use, describe, and justify methods of determining volume.

Measurement

Students will be able to...

- Apply the concepts of perimeter and area to the solution of problems.
- Find proportional relationships between polygons that are similar.
- Find and understand relationship among angles, line lengths, and areas of similar polygons.
- Identify, measure, describe, classify, and construct various angles, triangles, and quadrilaterals.
- Sort and classify triangles and quadrilaterals and use mathematical vocabulary to describe them.
- Solve problems involving units of measurement.
- Identify benchmarks for the measure of: length, weight, volume, and time.
- Order items by measures of weight and by measures of liquid amount.
- Measure weight with a balance scale and weights.
- Develop meaning for the concepts of volume and density; distinguishing between quantity and weight.
- Determine when precise measurement is required and when estimates are good enough.
- Use benchmarks to estimate measurements.
- Choose and accurately use appropriate tools for measuring: weight, volume, capacity and time.
- Recognize which measurement units are U.S. standard and which are metric.
- Find areas of triangles and parallelograms. Recognize that shapes with the same number of sides but different appearances can have the same area. Develop strategies to find the area of more complex shapes.
- Find volumes and surface areas of rectangular prisms.
- Understand the notion of volume and units of volume.
- Develop, use, describe, and justify methods of determining volume.
- Find the sum of the angles in simple polygons (up to eight sides) with and without measuring the angles.
- Distinguish and see relationships between turns and angles.
- Use known angles to find the measures of other angles.

Number Sense and Operations

Students will be able to...

- Demonstrate an understanding of place value.
- Can read, write and order large numbers.
- Can round larger numbers to the nearest multiple of 100 or 1000.
- Understand the magnitude of large quantities such as thousands, ten thousands, and hundred thousands and begins to develop a sense of the size of one million.

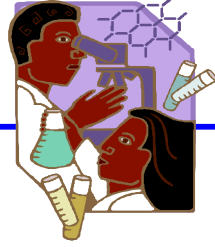
- Understand decimals as part of the base ten number system.
- Represent and compare very large and very small positive numbers in various forms.
- Demonstrate an understanding of fractions as ratio of whole numbers, as parts of unit wholes, and as parts of a collection, and as locations on a number line.
- Identify and determine common equivalent fractions, mixed numbers, decimals, and percents.
- Identify everyday situations that involve fractions, decimals, and percents.
- Identify and use equivalent fractions, decimals, and percents.
- Find and position integers, fractions, and decimals on the number line.
- Break fractions, decimals, and percents into familiar parts.
- Find decimals that are smaller than, larger than, or in between other decimals.
- Compare and order fractions, decimals, and percents.
- Understand percent as “out of 100”.
- Use percent to describe portions of groups.
- Use decimals to describe portions of groups.
- Compare and order fractions, decimals, and percents using landmarks and visual models.
- Identify, order, and label fractions between 0 and 1 on a number line.
- Apply number theory concepts---including prime and composite numbers---to the solution of problems.
- Understand number characteristics and their relationships, e.g., even, odd, multiples, factors, primes, and squares.
- Use factors of 100 and multiples of those factors to explore landmarks up to 100.
- Know the factor pairs of 100 and can relate them to the factor pairs of 1000 and 10,000.
- Select and use appropriate operations to solve problems involving addition, subtraction, multiplication, and division with whole numbers, fractions, decimals, and percents.
- Solve word problems involving fractions, decimals, and percents and expresses answers appropriately.
- Demonstrate an understanding of the inverse relationship of addition and subtraction, and use that understanding to simplifying computation and solve problems.
- Understand and explain the relationship among the four basic operations and uses those relationships to solve problems and model situations.
- Accurately and efficiently add, subtract, multiply, and divide whole numbers.
- Use mental and written strategies based on numerical reasoning to find sums, differences, products, and quotients.
- Use addition, subtraction, multiplication, and division notation accurately.
- Estimate results of computations with whole numbers, fractions, decimals, and percents. Describe reasonableness of estimates.
- Develop, record, explain, and compare strategies for estimating subtraction, multiplication, and division problems in more than one way.

Discussion, Presentation and Composition

Students will be able to...

- Use agreed upon rules to participate in large and small group discussions.
- Express ideas in an organized way.
- Explain their mathematical thinking in writing.
- Maintain a system for collecting, referring to, and sharing their work.

SCIENCE & TECHNOLOGY: GRADE 5



Topic: Population and Ecosystems

Adaptations of Living things

Students will be able to...

- Give examples of how inherited characteristics may change over time as adaptations to changes in the environment that enable organisms to survive, e.g., shape of beak or feet, placement of eyes on head, length of neck, shape of teeth, color.
- Give examples of how changes in the environment (drought, cold) have caused some plants and animals to die or move to new locations (migration)
- Give examples of how organisms can cause changes in their environment to ensure survival. Explain how some of these changes may affect the ecosystem.

Energy and Living Things

Students will be able to...

- Describe how energy derived from the sun is used by plants to produce sugar (photosynthesis) and is transferred within a food chain from producers (plants) to consumers to decomposers.

Topic: The Changing Earth Surface

The Water Cycle

Students will be able to:

- Describe how water on earth cycles in different forms and in different locations, including underground and in the atmosphere.
- Give examples of how the cycling of water, both in and out of the atmosphere, has an effect on climate.

Earth's History

Students will be able to:

- Give examples of how the surface of the earth changes due to slow processes such as erosion and weathering, and rapid processes such as landslides, volcanic eruptions, and earthquakes.

The Earth and the Solar System

Students will be able to:

- Recognize that the earth is part of a system called the “solar system” that includes the sun (a star), planets, and many moons. The earth is the third planet from the sun in our solar system.

Topic: Astronomy/ Time, Technology

The Earth and The Solar System

Students will be able to:

- Recognize that the earth is part of a system called the “solar system” that includes the sun (a star), planets, and many moons. The earth is the third planet from the sun in our solar system.
- Recognize that the earth revolves around (orbits) the sun in a year's time and that the earth rotates on its axis once approximately every 24 hours. Make connections between the rotation of the earth and day/night, and the apparent movement of the sun, moon and stars across the sky.
- Describe the changes that occur in the observable shape of the moon over the course of a month.

Light Energy

Students will be able to:

- Recognize that light travels in a straight line until it strikes an object or travels from one medium to another, and that light can be reflected, refracted, and absorbed

Topic: Technology/Engineering

Machines and Tools

Students will be able to...

- Use appropriate materials, tools, and machines to extend our ability to solve problems.
- Identify and explain the differences between simple and complex machines

Engineering Design

Students will be able to...

- Use the Engineering design process to solve a practical problem that reflects the needs for storage, shelter, or convenience.
- Describe different ways in which the problem can be represented.
- Compare natural systems with mechanical systems that are designed to serve similar purposes, e.g. a bird's wing as compared to an airplane's wing.

Discussion, Presentation and Composition

Students will be able to...

- Participate in formal and informal discussions in large and small groups, using agreed upon rules to conduct and facilitate them.
- Contribute knowledge to class discussions.
- Give formal and informal oral presentations using effective presentation skills.
- Express an idea in an organized way, with supporting details.
- Retell an observation with a beginning, middle and end, including important details.
- Use teacher developed criteria to prepare their presentations.
- Use listening skills to obtain information.
- Write frequently in response to readings, other presentations, and observations (e.g., summaries, questions, reactions, connections, predictions, reports).
- Maintain a system for collecting, referring to, and sharing their thoughts, observations, writings, illustrations, and other work.

PERFORMANCE STANDARDS: GRADE 5



All Subjects

Students are expected to earn a passing grade (levels 2-4, 60-100%, D- to A+) on the tests, products, and other assignments required by their teacher, including any grade-level assessments that may be developed and administered by each school.

Reading & Writing

1. Reading:

Citywide Assessments: Students are expected to meet minimum competency benchmarks on one of the following assessments.

- Scholastic Reading Inventory (lexile 700)
- Qualitative Reading Inventory (level 4.0)
- Gates-MacGinite (level 5.5)

Grade level proficiency benchmarks on each of these assessments are as follows:

- Scholastic Reading Inventory (lexile 850)
- Gates-MacGinite (level 6.0)

Students enrolled in the *Transition Bilingual Program* are expected to meet the following minimum competency benchmarks in English:

- Stage 2: SRI Level 15, Lexile 375
- Stage 3: SRI Level 15, Lexile 545
- Stage 4: SRI Level 15, Lexile 700

English/Native Language Arts: Students are expected to read and respond to a minimum of 20 books each year from multiple genres, including fiction and non-fiction. Students' responses should be collected in a Literature Response Journal. Students will select their books from the core literature list or from lists of books developed by teachers, in collaboration with their colleagues. The literature in these teacher-developed lists must meet the following criteria. The literature must be rigorous, explore diverse and relevant themes, represent a variety of perspectives (race, ethnicity, gender, class, and age), and include classical and contemporary literature. The lists must include books that represent the range of reading levels evident in students and they must vary from grade to grade

Teachers should select at least one or two books from their list that all students will read through shared reading, read alouds, guided reading, and/or book clubs/literature circles. The books will be chosen to: a) provide students with an opportunity to explore how a particular author uses language, structure, and other literary elements in a particular way to tell a story or inform the reader; b) engage all students in discussions about a single piece of literature or a particular theme; and c) develop and assess students' ability to respond to literature and use discussion strategies. Attention should be given to ensure the selections are rich in content and ideas and accessible to students with teacher and peer support.

2. Writing: *English/Native Language Arts*

- a. Students are expected to meet minimally acceptable standards (level 2-4 using BPS Task Descriptions, MCAS Scoring Guides, Six Traits Rubric, or comparable school-developed alternatives; levels 3-6 on MCAS ELA Composition Scoring Guide) on at least one independently produced *Persuasive Essay* and one independent *Response to Literature* (Key Question) by the close of the school year.
- b. Students are expected to keep a writer's notebook where they have the opportunity to collect ideas each day, think about their writing and write about what they're thinking and reading. The

notebook will include a large volume of work. A minimum of 6-8 pieces of work from multiple genres will emerge from their notebook, be taken through the writing process (including a seed idea, initial drafts, revisions, edits, completion/publication) and be assessed using a rubric. At least two of these works will be responses to complete works of literature.

3. Performance on reading and writing assessments should be factored into students' grades.

Mathematics

Students are expected to earn a passing grade (levels 2-4) on:

- End-of-unit assessments from the *Investigations* curriculum
- Citywide, BPS mid- and end-of-year assessments in mathematics

Performance on these assessments should be factored into students' final grades.

Massachusetts Comprehensive Assessment System (MCAS)

Students are expected to earn a passing score (levels 2-4) on the *Science & Technology/Engineering* and *History & Social Science* assessments administered in the spring. Performance on these assessments is not factored into a student's final grade.

